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EXAMINER	
SHUMATE, ANTHONY R	

ART UNIT	PAPER NUMBER
1775	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,641	SAUER ET AL.	
	Examiner	Art Unit	
	ANTHONY SHUMATE	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8,9 and 11-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8,9 and 11-29* is/are rejected.

7)☒ Claim(s) *8, 9, 13, 14, 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 2 December 2010 and 21 December 2010 have been entered.

Response to Amendment

2. The Amendment filed 21 December 2010 has been entered and fully considered.

3. Claims 1, 3-6, 8, 9, and 11-29 are pending, of which claims 1, 3, 4, 8, 11, 12, 15, and 22 were amended.

4. Some of the previous objection(s) and/or rejection(s) have been withdrawn in light of further consideration, Applicant's argument(s) and/or amendment(s).

Claim Objections

5. Claim 8, 9, 13, 14, 24 objected to because of the following informalities:

Claim 8, 13 has the phrase, "the first and the second nonwoven layer" which is unclear as to whether a single layer or a plurality of layers is recited.

Claim 24 appears to have an inappropriate mark within the phrase, "vacuum cleaner;" which should be removed or satisfactorily clarified.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 15-25, 28 and 29 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regard to claims 15 and 22, the phrase, "free" in "a **second region** of the filter structure **free** of the **filter paper layer**," is unclear.

It is noted that the claim describes that the filter structure is provided with the **filter paper layer**. As well, it is noted that the **second region** is of the filter structure. Therefore, it is assumed that the **second region** is attached to the **filter paper layer**; and this relationship produces ambiguity with the claim language.

It is unclear how the second region can be free of the filter paper layer, when the second region is attached to the filter paper layer. The second region

being attached to the filter paper layer is the antithesis of the second region being free of the filter paper layer. If the second region was actually free of the filter paper layer, then the second region could not be attached to the filter paper layer. Therefore, the claim appears to describe a physical impossibility.

.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 3-6, 8, 9, and 11-29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 4 have the phrase, “only said at least one region” which is unclear, thereby rendering the claims indefinite. The phrase in the context of either claim is unclear as to what is included and excluded.

With regard to claims 15 and 22, the phrase, "free" in "a **second region** of the filter structure **free** of the **filter paper layer**," is unclear.

It is noted that the claim describes that the filter structure is provided with the **filter paper layer**. As well, it is noted that the **second region** is of the filter structure. Therefore, it is assumed that the **second region** is attached to the **filter paper layer**; and this relationship produces ambiguity with the claim language.

It is unclear how the second region can be free of the filter paper layer, when the second region is attached to the filter paper layer. The second region being attached to the filter paper layer is the antithesis of the second region being free of the filter paper layer. If the second region was actually free of the filter paper layer, then the second region could not be attached to the filter paper layer. Therefore, the claim appears to describe a physical impossibility.

With regard to claim 4, it is unclear how the nonwoven layer can comprise an adhesive, when claim 8 describes that the adhesive is located at an interface between the nonwoven layer and second nonwoven layer.

If the nonwoven layer comprises the adhesive, then the adhesive cannot be located at an interface between the adhesive (i.e. nonwoven layer comprising the adhesive) and the second nonwoven layer. It is a physical impossibility for the adhesive to be between itself and the second nonwoven layer.

Furthermore, claim 4 conflicts with the specification and drawings. The nonwoven layer does not comprise the adhesive; which is evidenced by the specification reciting at page 10 fourth paragraph, "At the interface between meltblown fleece 102 and spunbond layer 103, hotmelt 104 is located." As well, figure 1 shows the hotmelt (104) as a separate layer from the spunbond layer (103). (MPEP 2173.03)

Claims 11 and 12 have the phrase, “only at least one region” which is unclear, thereby rendering the claims indefinite. The phrase in the context of either claim is unclear as to what is included and excluded.

Claims 11 and 12 recites the limitation "the region," and there is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the region," and there is insufficient antecedent basis for this limitation in the claim.

Claims 21, 28, 29 have the phrase, “at least about” which is unclear, thereby rendering the claim indefinite. (See 2173.05(b) A)

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) in view of CHAND (Structure and Properties of Polypropylene Fibers During Thermal Bonding) as evidence by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, and ARNOLD (US 5,707,468).

For instant claim 1, SCHULTINK teaches at figure 8E a spunbond layer (i.e. nonwoven layer) (filter).

It is the Examiner's position that a spunbond layer inherently has first surface area; and a region having a second surface area smaller than the first surface area.

Additionally for instant claim 1, SCHULTINK teaches at figure 8E a spunbond layer. Also, it is the Examiner's position that a spunbond layer has fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited (i.e. the region has fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the region is inhibited).

[Also for arguendo, WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

[Furthermore for arguendo, ARNOLD (US 5,707,468) provides extrinsic evidence at column 4 lines 49-57 “Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls.”]

As well for instant claim 1, SCHULTINK teaches at table IV and figure 4 a spunbond layer (12). Additionally, the Applicant has stated on the record in the correspondence filed 28 January 2009 page 9 paragraph 2 that it is their position

that SCHULTINK is describing properties of the laminate 6(36+35) at table IV. Therefore based on the position of the Applicant, SCHULTINK teaches at table IV and figure 4 the properties of the laminate 4/(12+11). For that reason, SCHULTINK teaches at table IV and figure 4 the maximum pore diameter for the spunbond layer (12) is 40.25 µm (i.e. the maximum pore diameter for the region is 40.25 µm).

It is the Examiner's position that inherently the average for a series of numbers must be less than or equal to the maximum value in that series. Therefore, inherently the average pore size (i.e. which is a result of a series of values of pore size) of the spunbond layer is less than or equal to 40.25 µm. Also, it is the Examiner's position that 40.25 µm is less than 50 µm.

Inherently for SCHULTINK, the spunbond material of table IV and figure 4 is the spunbond material of figure 8E; therefore the spunbond material of figure 8E has a maximum pore diameter of 40.25 µm, or in the alternative,

it would have been obvious for one having ordinary skill in the art at the time the invention was made provide the spunbond material of table IV and figure 4 of SCHULTINK for the spunbond material of figure 8E of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

In a second alternative, it would have been obvious for one having ordinary skill in the art at the time the invention was made provide the

spunbond material of SCHULTINK with a average pore size smaller than 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Plus for instant claim 1, SCHULTINK teaches at figure 8E a spunbond layer (53) joined to a meltblown layer (55) with hotmelt (i.e. adhesive).

SCHULTINK does not specifically teach wherein the at least one region is a hot calendered region.

But, CHAND teaches at page 155 column 1 that thermal bonding is the most popular method of bonding used in nonwovens production, and thermal bonding has the advantage of cleanliness of the process. Additionally, CHAND teaches at page 155 column 1 the several types of thermal bonding such as area-bond calendering, and point-bond calendering.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the point-bond calendering of CHAND in substitute of the hotmelt joining the spunbond layer (53) and meltblown layer (55) of SCHULTINK for the benefit of cleanliness as taught by CHAND at page 155 column 1.

Thereby the claim phrase, "the at least one region is a hot calendered region," is met.

Therefore, the claim(s) is/are met.

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) in view of CHAND (Structure and Properties of Polypropylene Fibers During Thermal Bonding) as evidence by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, and ARNOLD (US 5,707,468) as applied to claim 1 above, and further in view of ANDO et al. (US 5,206,061) ("ANDO").

For instant claim 3, SCHULTINK teaches at figure 8E a spunbond layer (53) for a vacuum cleaner bag (i.e. filter bag).

Also, SCHULTINK teaches at table 6a that the spunbond layer (53) has a basis weight of 45 g/ m^2. Also, it is the Examiner's position that 45 g/ m^2 is within the claimed range of 10 and 100 g/ m^2.

Alternatively, SCHULTINK teaches at figure 4 that the spunbond layer has a basis weight between 10-40 g/ m^2. Also, it is the Examiner's position that 10-40 g/ m^2 is within the claimed range of 10 and 100 g/ m^2.

It would have been obvious to one having ordinary skill in the art at the time invention was made to simply substitute the spunbond material of table IV and figure 4 of SCHULTINK for the spunbond material of figure 8E of SCHULTINK because the substitution of one type of fabric for another that are both used for the same purpose (i.e. vacuum cleaner

bag) would be well within the scope of the skilled artisan; or since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07) Also see KSR.

SCHULTINK does not specifically teach wherein the spunbond fibers have an average fineness of 0.6-12 denier.

But, ANDO teaches at column 3 lines 61 – 68 a spun bonded non-woven fabric. Also, ANDO teaches at column 3 lines 61-68 the mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or less for appreciable dust trapping.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provide the technique of a mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or less of ANDO with the spunbond of the SCHULTINK, since ANDO teaches at column 3 lines 61-68 that such a modification provides the benefit of appreciable dust trapping.

Therefore, the claim(s) is/are met.

14. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over van ROSSEN (WO 93/21812) in view of JOHNSON et al. (US 4,877,526) ("JOHNSON"), ANDO et al. (US 5,206,061) ("ANDO"), CHAND (Structure and

Properties of Polypropylene Fibers during Thermal Bonding), and ARNOLD (US 5,707,468) as evidenced by WARD (Micro Denier Nonwoven Process and Fabrics), and Webster's Third New International Dictionary.

For instant claims 1 and 3, van ROSSEN teaches at page 9 lines 19-20 a protective layer insert (38) which is spunbonded.

Also, van ROSSEN teaches at page 9 lines 5-18 a laminate used for the filter bag (28).

As well, van ROSSEN teaches at the figures the protective layer insert (38) has a first surface area, and the protective layer insert (38) has a region having a second surface area smaller than the first surface area.

Additionally, van ROSSEN teaches at page 8 lines 22-23 that the protective layer (38) is welded at the edges (36).

Additionally for instant claims 1 and 3 and arguendo, it is the Examiner's position that a spunbond layer (38) of van ROSSEN intrinsically comprises fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited.

[WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

As well for instant claims 1 and 3, van ROSSEN teaches at page 9 lines 19-20 a protective layer insert (38) which is spunbonded.

It is the Examiner's position that the spunbonded of van ROSSEN has a basis weight, the fibers an average fineness of denier, with an average pore size.

van ROSSEN does not specifically teach wherein the spunbond nonwoven layer having a basis weight between 10 and 100 g/m^2 and wherein the spunbond fibers have an average fineness of 0.6-12 denier, with an average pore size smaller than 50 µm.

But, JOHNSON teaches column 5 lines 37-43 a filter bag with a spunbond, pin-bonded polypropylene fabric having a basis weight of approximately 34 g/m^2, and an equivalent pore size of about 20 µm.

It would have been obvious to one having ordinary skill in the art at the time invention was made to simply substitute the spunbond layer of van ROSSEN with the spunbond layer of JOHNSON because the substitution of one type of fabric for another that are both used for the same purpose (i.e. filter bag) would be well within the scope of the skilled artisan. Also see KSR.

Furthermore and intrinsically, the equivalent pore size of about 20 µm of the spunbond of JOHNSON is smaller than an average pore size of 50 µm, or in the alternative it would have been obvious to one having ordinary skill in the art at the time the invention was made to have an average pore size of 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Furthermore in relation to the van ROSSEN and JOHNSON combination, JOHNSON does not specifically teach wherein the spunbond fibers have a an average fineness of 0.6-12 denier.

But, ANDO teaches at column 3 lines 61 – 68 a spun bonded non-woven fabric. Also, ANDO teaches at column 3 lines 61-68 the mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or less for appreciable dust trapping.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provide the technique of a mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or

less of ANDO with the spunbond of the van ROSSEN and JOHNSON et al. combination, since ANDO teaches at column 3 lines 61-68 that such a modification provides the benefit of appreciable dust trapping.

Also, it is the Examiner's position that the range of 10 denier or less overlaps the claimed range of 0.6-12 denier.

Plus for instant claims 1 and 3, ARNOLD (US 5,707,468) states at column 4 lines 49-57 "Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls."

Also, CHAND teaches at page 155 column 1 that thermal bonding is the most popular method of bonding used in nonwovens production, and thermal bonding as the advantage of the cleanliness of the process. Additionally, CHAND teaches at page 155 column 1 the several types of thermal bonding such as area-bond calendering, and point-bond calendering (i.e. hot calendered).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the point-bond calendering (i.e. hot calendering) of CHAND to the spunbond of the van ROSSEN, ANDO and JOHNSON et al. combination, since ARNOLD states at column 4 lines 49-57

"Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity."

[For arguendo, it is noted that JOHNSON et al. teaches column 5 lines 37-43 a filter bag with a spunbond, **pin-bonded** polypropylene fabric. (bolding added for emphasis)]

Therefore, the claim(s) is/are met.

15. Claims 4 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over SCHULTINK (EP 960645A2) as evidenced by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, and ARNOLD (US 5,707,468).

For instant claims 4 and 5, SCHULTINK teaches at figure 8E a spunbond layer (i.e. nonwoven layer) (filter).

It is the Examiner's position that a spunbond layer inherently has first surface area; and a region having a second surface area smaller than the first surface area.

Additionally for instant claims 4 and 5, SCHULTINK teaches at figure 8E wherein the region/spunbond layer has hotmelt (i.e. adhesive). It is the Examiner's position that the hotmelt (i.e. adhesive) inherently causes at least some fibers of the region/spunbond layer to be bonded together such that a

movement of the fibers relative to each other in a direction parallel to a surface of the layer is inhibited.

[For arguendo, SCHULTINK teaches at figure 8E a spunbond layer. Also, it is the Examiner's position that a spunbond layer has fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited (i.e. the region has fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the region is inhibited).]

[Also for arguendo, WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

[Furthermore for arguendo, ARNOLD (US 5,707,468) provides extrinsic evidence at column 4 lines 49-57 “Spunbond fabrics are generally lightly bonded in some manner immediately as they are

produced in order to give them sufficient structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls."]

As well for instant claims 4 and 5, SCHULTINK teaches at table IV and figure 4 that a spunbond layer (12). Additionally, the Applicant has stated on the record in the correspondence filed 28 January 2009 page 9 paragraph 2 that it is their position that SCHULTINK is describing parameters of the laminate 6(36+35) at table IV. Therefore based on the position of the Applicant, SCHULTINK teaches at table IV and figure 4 the properties of the laminate 4/(12+11). For that reason, SCHULTINK teaches at table IV and figure 4 the maximum pore diameter for the spunbond layer (12) is 40.25 µm.

It is the Examiner's position that inherently the average for a series of numbers must be less than or equal to the maximum value in that series. Therefore, inherently the average pore size (i.e. which is a result of a series of values of pore size) of the spunbond layer is less than or equal to 40.25 µm. Also, it is the Examiner's position that 40.25 µm is less than 50 µm.

Inherently for SCHULTINK, the spunbond material of table IV and figure 4 is the spunbond material of figure 8E; therefore the spunbond material of figure 8E has a maximum pore diameter of 40.25 µm, or in the alternative,

It would have been obvious for one having ordinary skill in the art at the time the invention was made provide the spunbond material of table IV and figure 4 of SCHULTINK for the spunbond material of figure 8E of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

In a second alternative, it would have been obvious for one having ordinary skill in the art at the time the invention was made provide a nonwoven layer with a average pore size smaller than 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Therefore, the claim(s) is/are met.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) as evidenced by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, and ARNOLD (US 5,707,468) as applied to claims 4 and 5 above, and further in view of OHUE et al. (US 4,663,222 A) ("OHUE").

For instant claim 6 with consideration given to SCHULTINK, OHUE teaches at column 28 lines 20-60 the technique of applying the hotmelt at an amount of 10 g/m^2 to a filter device with non-woven fabric.

Also, SCHULTINK teaches particularly at figure 8H and title the technique of applying the hotmelt to a filter device with non-woven fabric (spunbond).

One of ordinary skill in the art would have recognized that applying the hotmelt at an amount of 10 g/m^2 would have yielded the predictable result of providing sufficient hotmelt for the bonding of layers of the filter together as described by OHUE et al. at column 28 lines 20-60. The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art.

Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the amount of hotmelt be slightly less than $10g/m^2$ thereby being between 1 and $10g/m^2$, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A).

Therefore, the claim(s) is/are met.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) as evidence by WARD (Micro Denier Nonwoven Process

and Fabrics), Webster's Third New International Dictionary, ARNOLD (US 5,707,468) and DIEHL et al. (US 6,425,978 B1).

For instant claim 11, SCHULTINK teaches at figure 8E a spunbond layer for a vacuum cleaner bag and the spunbond layer with a region treated with hotmelt (i.e. a treated region of the nonwoven layer filter).

It is the Examiner's position that a spunbond layer inherently has a region and a surface area. For clarity, the Examiner is interpreting the region of the nonwoven layer as a portion of the spunbond layer of SCHULTINK. Therefore, the region has a surface area smaller than the filter (i.e. nonwoven layer).

As well the phrase, "such that the treated region has an average pore size smaller than 50 µm" is noted. Also, SCHULTINK teaches at table IV and figure 4 a spunbond layer (12). Additionally, the Applicant has stated on the record in the correspondence filed 28 January 2009 page 9 paragraph 2 that it is there position that SCHULTINK is describing parameters of the laminate 6(36+35) at table IV. Therefore based on the position of the Applicant, SCHULTINK teaches at table IV and figure 4 the properties of the laminate 4/(12+11). For that reason, SCHULTINK teaches at table IV and figure 4 the maximum pore diameter for the spunbond layer (12) is 40.25 µm.

It is the Examiner's position that inherently the average for a series of numbers must be less than or equal to the maximum value in that series.

Therefore, intrinsically the average pore size (i.e. which is a result of a series of values of pore size) of the spunbond layer is less than or equal to 40.25 µm. Also, it is the Examiner's position that 40.25 µm is less than 50 µm.

It would have been obvious for one having ordinary skill in the art at the time the invention was made provide the spunbond material of table IV and figure 4 of SCHULTINK for the spunbond material of figure 8E of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

In the alternative, it would have been obvious for one having ordinary skill in the art at the time the invention was made provide the spunbond material of figure 8E of SCHULTINK with an average pore size smaller than 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Thereby the claim phrase, "such that the treated region has an average pore size smaller than 50 µm," is met.

For instant claim 11, SCHULTINK teaches at figure 8E a spunbond layer. Also, it is the Examiner's position that a spunbond layer comprises fibers being

bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited.

[WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, Copyright 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

[Furthermore, ARNOLD (US 5,707,468) provides extrinsic evidence at column 4 lines 49-57 “Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls.”]

Thereby, the claim phrase, "such that the fibers are bonded together and a movement of the fibers relative to each other in a direction parallel to the surface of the region is inhibited," is met.

As well for instant claim 11, SCHULTINK does not specifically teach wherein the treating step comprises spraying dry-bond adhesive. But, SCHULTINK teaches at figure 8E a region of the spunbond layer (i.e. nonwoven layer) (53) treated with hotmelt, and attached to a meltblown layer (55). As well, SCHULTINK teaches at paragraph 34 a technique of spraying latex binder (i.e. dry-bond adhesive) to dry-laid capacity paper webs and squeezing (i.e. applying pressure) the webs to obtain a bonding of the webs (i.e. fibers).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the hotmelt of SCHULTINK with latex binder of SCHULTINK, and provide the technique of bonding webs (i.e. fibers) for the benefit of bonding the spunbond layer (53), and the meltblown layer (55).

[DIEHL et al. (US 6425978 B1) provides extrinsic evidence at the title of a latex binder for nonwoven fibers and article made therewith.]

Thereby, the claim phrase, "the treating step comprises the steps of:

spraying of hotmelt, cold glue, dry-bond adhesive, thermoplastic polymer, or mixtures thereof, and applying pressure to obtain a bonding of the fibers in the treated region," is met.

Therefore, the claim(s) is/are met.

18. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) in view of ARNOLD (US 5,707,468) and CHAND

(Structure and Properties of Polypropylene Fibers during Thermal Bonding) as evidence by WARD (Micro Denier Nonwoven Process and Fabrics), and Webster's Third New International Dictionary.

For instant claim 12, SCHULTINK teaches at figure 8E a spunbond layer for a vacuum cleaner bag (i.e. nonwoven layer).

It is the Examiner's position that a spunbond layer inherently has a region and a surface area. For clarity, the Examiner is interpreting the region of the nonwoven layer as a portion of the spunbond layer of SCHULTINK. Therefore, the region has a surface area smaller than the filter (i.e. nonwoven layer).

As well for instant claim 12, SCHULTINK teaches at table IV and figure 4 that a spunbond layer (12). Additionally, the Applicant has stated on the record in the correspondence filed 28 January 2009 page 9 paragraph 2 that it is there position that SCHULTINK is describing parameters of the laminate 6(36+35) at table IV. Therefore based on the position of the Applicant, SCHULTINK teaches at table IV and figure 4 the properties of the laminate 4/(12+11). For that reason, SCHULTINK teaches at table IV and figure 4 the maximum pore diameter for the spunbond layer (12) is 40.25 µm.

It is the Examiner's position that inherently the average for a series of numbers must be less than or equal to the maximum value in that series. Therefore, intrinsically the average pore size (i.e. which is a result of a series of

values of pore size) of the spunbond layer is less than or equal to 40.25 µm. Also, it is the Examiner's position that 40.25 µm is less than 50 µm.

It would have been obvious for one having ordinary skill in the art at the time the invention was made to provide the spunbond material of table IV and figure 4 of SCHULTINK for the spunbond material of figure 8E of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

In the alternative, it would have been obvious for one having ordinary skill in the art at the time the invention was made provide the spunbond material of figure 8E of SCHULTINK with an average pore size smaller than 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

For instant claim 12, SCHULTINK teaches at figure 8E a spunbond layer. Also, it is the Examiner's position that a spunbond layer comprises fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited.

[WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, Copyright 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

As well for instant claim 12, SCHULTINK does not specifically teach wherein the treating step comprises the step of hot calendering. But, SCHULTINK teaches at figure 8E a spunbond layer.

ARNOLD (US 5,707,468) states at column 4 lines 49-57 “Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls.”

Also, CHAND teaches at page 155 column 1 that thermal bonding is the most popular method of bonding used in nonwovens production, and thermal

bonding as the advantage of the cleanliness of the process. Additionally, CHAND teaches at page 155 column 1 the several types of thermal bonding such as area-bond calendering, and point-bond calendering.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the point-bond calendering of CHAND to the spunbond of SCHULTINK, since ARNOLD states at column 4 lines 49-57 "Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity."

Therefore, the claim(s) is/are met.

19. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) as evidenced by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, and ARNOLD (US 5,707,468) as applied to claim 4 and 5, and further in view of LUTZ et al. (Polypropylene: An A-Z Reference) ("LUTZ").

For instant claim 26, SCHULTINK does teach at page 3 lines 37-43 and figure 8H, wherein the adhesive is a hot melt. LUTZ teaches at page 301 and 303, that pulverized polymer is an alternative to hot melt for adhesion of fibers (nonwoven material). One of ordinary skill in the pertinent art would considered it obvious to substitute the hot melt used by SCHULTINK for the equivalent

pulverized polymer to yield the predictable result of adhering fibers (nonwoven material).

Therefore, the claim(s) is/are met.

20. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHULTINK (EP 960645A2) as evidence by WARD (Micro Denier Nonwoven Process and Fabrics), Webster's Third New International Dictionary, ARNOLD (US 5,707,468) and DIEHL et al. (US 6425978 B1) as applied to claim 11, and further in view of LUTZ et al. (Polypropylene: An A-Z Reference) ("LUTZ").

For instant claim 27, SCHULTINK does teach at page 3 lines 37-43 and figure 8H, wherein the adhesive is a hot melt. LUTZ et al. teaches at page 301 and 303, that pulverized polymer is an alternative to hot melt for adhesion of fibers (nonwoven material). One of ordinary skill in the pertinent art would considered it obvious to substitute the hot melt used by SCHULTINK for the equivalent pulverized polymer to yield the predictable result of adhering fibers (nonwoven material).

Therefore, the claim(s) is/are met.

21. Claims 4, 8, 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over van ROSSEN (WO 93/21812) in view of JOHNSON et al. (US 4,877,526), ANDO et al. (US 5,206,061), SCHULTINK (EP 0960645 A2), CHAND

(Structure and Properties of Polypropylene Fibers during Thermal Bonding) and FESCO (US 3,498,031) as evidenced by WARD (Micro Denier Nonwoven Process and Fabrics), and Webster's Third New International Dictionary.

For instant claims 4, 8, 9, 13 and 14, van ROSSEN does not specifically teach for the embodiment with the filter bag (28) that the adhesive is located at an interface between the first and second nonwoven layer such that fibers of the first and second nonwoven layer such that fibers of the first or the second nonwoven layer or the first and the second nonwoven layer are bonded together and a movement of the fibers in the first or second nonwoven layer or the first and second nonwoven layer relative to each other in a direction parallel to a surface of the layer is inhibited. But, van ROSSEN teaches at page 9 lines 19-20 a protective layer insert (28) (a first nonwoven layer) which is spunbonded. Also, van ROSSEN teaches at page 9 lines 5-18 a laminate used for the filter bag (28) having a laminate of a spunbond layer and a meltblown layer (a second nonwoven layer). Additionally, van ROSSEN teaches at page 8 lines 22-23 that the protective layer (38) is welded at the edges (36). Also, FESCO teaches at the title, the figures and column 2 lines 53-71 a filter bag with a strip (14) which is applied to the material (10) with adhesive strips (16), wherein the adhesive strips (16) are between the material (10) and the strip (14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to simply substitute the welding technique of van ROSSEN with the adhesive strip

technique of FESCO. Also, it is the Examiner's position that the adhesive used to apply the protective layer (38) (first nonwoven layer) with the meltblown layer (second nonwoven layer) of the laminate of the filter bag of van ROSSEN would intrinsically cause the fibers of the first and second nonwoven layers to be bonded together and a movement of the fibers in the first and second nonwoven layer relative to each other in a direction parallel to a surface of the first layer is inhibited.

SCHULTINK (EP 0960645 A2) teaches at figure 2 that the meltblown layer of a spunbond and meltblown laminate is on the inside of the bag.

It is the Examiner's position that a spunbond layer (28) inherently has a region. (For clarity, the Examiner is interpreting the region of the spunbond layer (28) as the entirety of the spunbond layer (28) of van ROSSEN.)

It is also the Examiner's position that the region/spunbond layer (28) of van ROSSEN inherently has an area and a thickness.

Apparatus claims 8 and 9 must structurally differentiate over the prior art to be patentable. Whether or not the area or a thickness of the region/spunbond layer was predetermined does not patently differentiate over the structural inherency of that a region/spunbond layer has an area and a thickness.

Additionally for instant claims 4, 8, 9, 13 and 14, it is the Examiner's position that a spunbond layer (28) of van ROSSEN intrinsically comprises fibers being bonded together such that a movement of the fibers relative to each other in a direction parallel to a surface of the layers is inhibited.

[WARD (Micro Denier Nonwoven Process and Fabrics) provides extrinsic evidence at figure 3 of a 600 times magnification of a spunbond fabric which shows the fibers of the fabric bond together.]

[For clarity, Webster's Third New International Dictionary, Unabridged, 1993 provides extrinsic evidence that bond means a connection or system of connections in which adjacent parts of a structure are made to overlap so as to be tied or bound together, or bond means resistance to slipping (as between the major components of a structure) provided by adhesion or friction.]

As well for instant claims 4, 8, 9, 13 and 14, van ROSSEN does not specifically teach wherein the spunbond nonwoven layer having a basis weight between 10 and 100 g/m^2 and wherein the spunbond fibers have an average fineness of 0.6-12 denier, with an average pore size smaller than 50 µm. But, van ROSSEN teaches at page 9 lines 19-20 a protective layer insert (28) (a first nonwoven layer) which is spunbonded. Also, JOHNSON et al. teaches column 5 lines 37-43 a spunbond, pin-bonded polypropylene fabric having a basis weight of approximately 34 g/m^2, and an equivalent pore size of about 20 µm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the spunbond layer of van ROSSEN with the spunbond layer of JOHNSON et al.

Intrinsically, the equivalent pore size of about 20 µm of the spunbond of JOHNSON et al. is smaller than an average pore size of 50 µm, or in the alternative it would have been obvious to one having ordinary skill in the art at

the time the invention was made to have an average pore size of 50 µm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Furthermore in relation to the van ROSSEN and JOHNSON et al. combination, JOHNSON et al. does not specifically teach wherein the spunbond fibers have a an average fineness of 0.6-12 denier. But, JOHNSON et al. teaches column 5 lines 37-43 a spunbond. Additionally, ANDO et al. teaches at column 3 lines 61 – 68 a spun bonded non-woven fabric. Also, ANDO et al. teaches at column 3 lines 61-68 the mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or less for appreciable dust trapping. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provide the technique of a mean (i.e. average) fineness of the fibers of the non-woven fabric is preferably 10 denier or less of ANDO et al. with the spunbond of the van ROSSEN and JOHNSON et al. combination, since ANDO et al. teaches at column 3 lines 61-68 that such a modification provides the benefit of appreciable dust trapping. It is the Examiner's position that the range of 10 denier or less overlaps the claimed range of 0.6-12 denier.

Plus for instant claims 4, 8, 9, 13 and 14, ARNOLD (US 5,707,468) states at column 4 lines 49-57 "Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient

structural integrity to withstand the rigors of further processing into a finished product. This light, first step bonding may be accomplished through the use of an adhesive applied to the fibers as a liquid or powder which may be heat activated, or more commonly, by compaction rolls." Also, CHAND teaches at page 155 column 1 that thermal bonding is the most popular method of bonding used in nonwovens production, and thermal bonding as the advantage of the cleanliness of the process. Additionally, CHAND teaches at page 155 column 1 the several types of thermal bonding such as area-bond calendering, and point-bond calendering (i.e. involving the applying of pressure). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the point-bond calendering of CHAND to the spunbond of the van ROSSEN and JOHNSON et al. combination, since ARNOLD states at column 4 lines 49-57 "Spunbond fabrics are generally lightly bonded in some manner immediately as they are produced in order to give them sufficient structural integrity."

For instant claims 4, 8, 9, 13 and 14, van ROSSEN does not specifically teach the adhesive is a hotmelt. But, SCHULTINK teaches at figure 8l that hotmelt is a suitable adhesive for adhering two layers of a bag together. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the hotmelt adhesive of SCHULTINK known to be used with adhering bag layers as the adhesive for the van ROSSEN and FESCO combination.

Therefore, the claim(s) is/are met.

22. Claims 15-19, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over van ROSSEN (WO 93/21812).

For instant claims 15 and 22, van ROSSEN does not specifically teach a filter structure wherein a surface or an interface of the filter structure is provided with a filter paper layer having a smaller surface area than the filter structure. But, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 9 lines 34-35 a filter structure (42). Also, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 10 line 28 a filter layer (48). Additionally, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 11 lines 16-20 a filter structure (42) with a surface having a filter layer (48) having a smaller surface area than the filter structure (42). As well, van ROSSEN teaches at the figures particularly figures 3 and 4 and page 10 line 5 a filter paper layer (42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the filter layer material of layer (48) of van ROSSEN with the filter paper material (42) of van ROSSEN, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

Therefore, the claim(s) is/are met.

For instant claims 16 and 17, van ROSSEN teaches at page 11 lines 5-10 wherein the filter paper layer is bonded to the filter structure (via glue at ends 51) (i.e. cold glue).

Therefore, the claim(s) is/are met.

For instant claim 18, van ROSSEN teaches at page 11 lines 5-10 wherein the filter paper layer is bonded to the filter structure at ends (51) (i.e. a discrete region).

Therefore, the claim(s) is/are met.

For instant claim 19, van ROSSEN does not specifically teach wherein the filter structure (42) comprises a nonwoven layer. But, van ROSSEN teaches at the figures particularly figures 3 and 4 and page 10 line 5 a filter paper layer (42). Also, van ROSSEN teaches for another embodiment at page 7 lines 3-6 and page 9 lines 5-10 SBMF with a nonwoven layer for the filter bag (16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the filter paper layer (42) of van ROSSEN with the SBMF with a nonwoven layer of van ROSSEN, since it has been held to be within the general skill of a worker in the art to select a known material on the

basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

Therefore, the claim(s) is/are met.

For instant claim 23, van ROSSEN states at the figures and page 11 lines 13-20 “a protective layer for protecting the dust bag against damages by particles carried in the air flow and impinging thereon at a high velocity. The protective layer extends through the dust bag as a comparatively narrow strip in order to cover the surface area opposite the inlet opening of the dust bag,” (i.e. the filter layer (38) is provided at a region of a surface of the filter structure such that, in operation, the region is exposed directly to an airflow entering the bag).

Therefore, the claim(s) is/are met.

For instant claim 24, van ROSSEN teaches at the figures and page 10 lines 32-34 the filter layer (42) with two opposite wall portions (52 and 54) (i.e.two portions of filter medium). Also, van ROSSEN teaches at the figures and page 11 line 6 folding and gluing the open ends (51) (i.e. wherein both portions are bonded together at an outer edge). Additionally, van ROSSEN teaches at the figures and page 10 line 37 - page 11 line 1 wherein the first portion (54) comprises an air inlet (56). Also, van ROSSEN teaches at the figures and page 10 lines 34-36 the second portion (52) comprises the filter layer (48) at a region opposite to the air inlet (56).

Therefore, the claim(s) is/are met.

For instant claim 25, van ROSSEN teaches at the figures particularly figures 3 and 4 wherein the filter layer (48) is provided at the inner surface of the bag (28).

Therefore, the claim(s) is/are met.

23. Claims 21, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over van ROSSEN (WO 93/21812) as applied to claims 15-19, and 22-25 above, and further in view of SCHULTINK (EP 960645A2).

For instant claim 21, van ROSSEN does not specifically teach wherein the filter paper layer has an air permeability of at least about 250 $l/m^2/s$. But, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 10 line 28 a filter layer (48). Also, van ROSSEN teaches at the abstract a filter bag. Similarly, SCHULTINK teaches at the title a vacuum cleaner bag or filter. Also, SCHULTINK teaches at figure 1 and claim 27 a filter paper layer with an air permeability of 200-500 $l/m^2/s$. It is the Examiner's position that an air permeability of 200-500 $l/m^2/s$ is within the claimed range of at least about 250 $l/m^2/s$. Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the filter layer (48) of van ROSSEN with the filter paper layer of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the

basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

Therefore, the claim(s) is/are met.

For instant claims 28 and 29, van ROSSEN does not specifically teach wherein the filter paper layer has an air permeability of at least about 500 $l/m^2/s$, or at least about 600 $l/m^2/s$. But, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 10 line 28 a filter layer (48). Also, van ROSSEN teaches at the abstract a filter bag. Similarly, SCHULTINK teaches at the title a vacuum cleaner bag or filter. Also, SCHULTINK teaches at figure 1 and claim 49 a filter paper layer with an air permeability of 500-8000 $l/m^2/s$. It is the Examiner's position that an air permeability of 500-8000 $l/m^2/s$ is within the claimed range of at least about 500 $l/m^2/s$, and at least about 600 $l/m^2/s$. Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the filter layer (48) of van ROSSEN with the filter paper layer of SCHULTINK, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

Therefore, the claim(s) is/are met.

24. Claims 15 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admission in view of van ROSSEN (WO 93/21812).

For instant claims 15 and 20, the Applicant admits on the record at the instant specification page 11 last paragraph that the standard (i.e. known) CAPAFIL 50 vacuum cleaner bag (i.e. filter structure) has a successively spunbond, an air-laid, a spunbond, a melt-blown, and a spunbond layer.

Also for instant claims 15 and 20, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 9 lines 34-35 a filter structure (42) for a bag. Also, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 10 line 28 a filter layer (48). Additionally, van ROSSEN teaches at the figures particularly figures 3 and 4, and the abstract, page 11 lines 16-20 a filter structure (42) with a surface having a filter layer (48) having a smaller surface area than the filter structure (42). As well, van ROSSEN teaches at page 11 lines 13-16 the protective layer (48) protects the dust bag against damages by particles carried in the air flow and impinging thereon at a high velocity. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the filter layer (48) with the technique of providing a filter structure (42) with a surface having a filter layer (48) having a smaller surface area than the filter structure (42) of van ROSSEN with the CAPAFIL 50, since van ROSSEN teaches at page 11 lines 13-16 that such a modification would provide the benefit of protecting the dust bag

against damages by particles carried in the air flow and impinging thereon at a high velocity.

As well for instant claims 15 and 20, van ROSSEN teaches at the figures particularly figures 3 and 4 and page 10 line 5 a filter paper layer (42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to simply substitute the filter layer material of layer (48) of van ROSSEN and CAPAFIL 50 combination with the filter paper material (42) of van ROSSEN, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. (MPEP 2144.07)

Therefore, the claim(s) is/are met.

Response to Arguments

25. Applicant's arguments filed 2 December 2010 and 21 December 2010 have been fully considered but they are not persuasive.

26. The Applicant argues at page 7 new claim limitations. In response, the Applicant is invited to review the above rejections directed to the new claim limitations.

27. Applicant argues, "None of the references cited in the October 2, 2010 Office Action teach or suggest a layer of a filter having a treatment on only part of the layer."

a. Respectfully, the Examiner does not find the argument persuasive. The claims do not explicitly recite, "a layer of a filter having a treatment on only part of the layer."

b. Anyway, van ROSSEN teaches particularly at figure 3 a layer (42) of a filter having a second layer (48) applied (i.e. treatment) on only part of the layer (42).

Conclusion

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY SHUMATE whose telephone number is (571)270-5546. The examiner can normally be reached on M-Th 9-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on (571)272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. S./
Examiner, Art Unit 1775

/Jason M. Greene/
Primary Examiner, Art Unit 1775